

LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in this application:

1. (Currently Amended) A method for determining therapeutic resonant frequencies of electromagnetic radiation for influencing a target genomic material, the genomic material surrounded by a medium, comprising:
 - providing a frequency-emitting device;
 - determining a velocity of the electromagnetic radiation through the medium surrounding the genomic material;
 - determining a wavelength of the genomic material, the genomic material comprising a plurality of base pairs spaced apart by an average spacing, the average spacing comprising a known value, by determining the number of base pairs in the genomic material and multiplying the number of base pairs by the known value for the average spacing between base pairs;
 - determining a first resonant frequency of the genomic material in one electromagnetic frequency range by dividing the velocity of the electromagnetic radiation through the surrounding medium by the wavelength of the genomic material;
 - ~~shifting~~ multiplying or dividing the first resonant frequency by a factor of a power of two to provide a second ~~at least one of a group of resonant frequency frequencies in at least one other another~~ electromagnetic frequency range;
 - programming the frequency-emitting device to emit the second ~~at least one of a group of resonant frequencies frequency in the at least one other electromagnetic frequency range;~~ and
 - selectively influencing the target genomic material with the ~~at least one of a group of second resonant frequencies frequency in the another at least one other~~ electromagnetic frequency range when the frequency-emitting device emits the ~~at least one of a group of second resonant frequencies frequency in the at least one other electromagnetic frequency range~~ into the medium surrounding the target genomic material.

2. (Currently Amended) The method of claim 1, ~~the genomic material comprising a plurality of spaced apart base pairs~~, wherein determining the wavelength of the genomic material comprises ~~determining the number of base pairs in the genomic material~~, measuring the spacing between adjacent base pairs, and multiplying the number of base pairs in the genomic material by the measured spacing between adjacent base pairs.

3. (Canceled)

4. (Original) The method of claim 1, wherein the medium surrounding the genomic material is in-vivo tissue having a unique electrical permittivity, wherein determining the velocity of the electromagnetic radiation through the medium surrounding the genomic material comprises relating the unique electrical permittivity of in-vivo tissue to the velocity, wherein $velocity = 1 / \sqrt{(\epsilon_0 \mu_0)}$, where ϵ_0 is electrical permittivity, and μ_0 is magnetic permeability.

5. (Original) The method of claim 4, further comprising the step of determining a refractive index of the electromagnetic radiation through the in-vivo tissue by dividing the speed of light in a vacuum by the speed of light in in-vivo tissue, wherein dividing one therapeutic resonant frequency determined for the genomic material surrounded by air by the refractive index for in-vivo tissue yields one of the therapeutic resonant frequencies for the genomic material surrounded by in-vivo tissue.

6. (Currently Amended) The method of claim 1, further comprising the steps of:
multiplying the second ~~at least one of a group of~~ resonant frequency ~~frequencies~~ in at least one other another electromagnetic frequency range by a positive integer to determine harmonic frequencies,

dividing the second ~~at least one of a group of~~ resonant frequency ~~frequencies~~ in at least one other ~~electromagnetic frequency range~~ by a positive integer to determine subharmonic frequencies,

programming the frequency-emitting device to emit the harmonic and subharmonic frequencies, and

selectively influencing the target genomic material with the second ~~at least one of a group~~ of resonant frequency ~~frequencies~~ in ~~at least one other~~ another electromagnetic frequency range and the harmonic and subharmonic frequencies when the frequency-emitting device emits the second ~~at least one of a group~~ of resonant frequency ~~frequencies~~ in ~~at least one other~~ electromagnetic frequency range and the harmonic and subharmonic frequencies into the medium surrounding the target genomic material.

7. (Original) The method of claim 1, wherein selectively influencing the target genomic material comprises debilitating the target genomic material.

8. (Original) The method of claim 1, wherein selectively influencing the target genomic material comprises stimulating the target genomic material.

9. (Currently Amended) The method of claim 1, wherein selectively influencing the target genomic material with the second ~~at least one of a group~~ of resonant frequency ~~frequencies~~ in ~~at least one other electromagnetic frequency range~~ comprises selectively influencing genomic material in humans.

10. (Currently Amended) The method of claim 1, wherein selectively influencing the target genomic material with the second ~~at least one of a group~~ of resonant frequency ~~frequencies~~ in ~~at least one other electromagnetic frequency range~~ comprises selectively influencing genomic material in animals.

11. (Currently Amended) The method of claim 1, wherein selectively influencing the target genomic material with the second ~~at least one of a group~~ of resonant frequency ~~frequencies~~ in ~~at least one other electromagnetic frequency range~~ comprises selectively influencing genomic material in agricultural settings.

12. (Currently Amended) The method of claim 1, wherein selectively influencing the target genomic material with the second at least one of a group of resonant frequency frequencies in at least one other electromagnetic frequency range comprises selectively influencing genomic material in water systems.

13. (Currently Amended) The method of claim 1, wherein selectively influencing the target genomic material with the second at least one of a group of resonant frequency frequencies in at least one other electromagnetic frequency range comprises selectively influencing genomic material in food processing systems.

14. (Currently Amended) The method of claim 1, wherein the medium surrounding the genomic material is in-vivo tissue, further comprising the steps of:

determining for the genomic material in a medium of air the first resonant frequency in one electromagnetic frequency range and the second at least one of a group of resonant frequency frequencies in at least one other another electromagnetic frequency range, and

multiplying each of the first resonant frequency in one electromagnetic frequency range and the second at least one of a group of resonant frequency frequencies in at least one other another electromagnetic frequency range determined for the genomic material in a medium of air by the square root of two to yield corresponding resonant frequencies for the genomic material surrounded by in-vivo tissue.

15. (Currently Amended) A method for determining therapeutic resonant frequencies of electromagnetic radiation for influencing a target genomic material, the genomic material surrounded by a first medium, comprising:

providing a frequency-emitting device;

determining a velocity of the electromagnetic radiation through the first medium;

determining a wavelength of the genomic material, the genomic material comprising a plurality of base pairs spaced apart by an average spacing, the average spacing comprising a

known value, wherein determining the wavelength of the genomic material comprises determining the number of base pairs in the genomic material and multiplying the number of base pairs in the genomic material by the known value for the average spacing between base pairs;

determining a first resonant frequency of the genomic material in one electromagnetic frequency range by dividing the velocity of the electromagnetic radiation through the first medium by the wavelength of the genomic material;

~~shifting~~ multiplying or dividing the first resonant frequency by a factor of a power of two to provide a second at least one of a group of resonant frequency frequencies in at least one other another electromagnetic frequency range;

~~multiplying the second at least one of a group of resonant frequency frequencies in at least one other electromagnetic frequency range~~ by a positive integer to determine harmonic frequencies;

~~dividing the second at least one of a group of resonant frequency frequencies in at least one other electromagnetic frequency range~~ by a positive integer to determine subharmonic frequencies;

programming the frequency-emitting device to emit the second at least one of a group of resonant frequency frequencies in at least one other another electromagnetic frequency range and the harmonic and subharmonic frequencies; and

selectively influencing the target genomic material with the second at least one of a group of resonant frequency frequencies in at least one other another electromagnetic frequency range and the harmonic and subharmonic frequencies when the frequency-emitting device emits the second at least one of a group of resonant frequency frequencies in at least one other electromagnetic frequency range and the harmonic and subharmonic frequencies into the first medium surrounding the target genomic material.

16. (Currently Amended) The method of claim 15, wherein the genomic material is surrounded by a second medium, further comprising determining resonant frequencies for the genomic material surrounded by the second medium, the second medium having a unique

electrical permittivity, the method further comprising determining the velocity of the electromagnetic radiation through the second medium according to the relationship

$$\text{velocity} = 1 / \sqrt{(\epsilon_0 \mu_0)},$$

where ϵ_0 is electrical permittivity, and μ_0 is magnetic permeability, dividing the speed of light in a vacuum by the velocity in the second medium to determine a refractive index of the electromagnetic radiation through the second medium, and dividing the first resonant frequency in one electromagnetic frequency range and the second at least one of a group of resonant frequency frequencies in ~~at least one other~~ another electromagnetic frequency range determined for the genomic material in the first medium by the refractive index for the second medium.

17. (Currently Amended) A method for determining therapeutic resonant frequencies of electromagnetic radiation for influencing atomic and molecular particles, each particle having a mass and surrounded by a medium, comprising:

providing a frequency-emitting device;

determining a velocity of the electromagnetic radiation through the medium surrounding the particle;

determining a wavelength of the particle by dividing Plank's constant by the product of the mass of the particle and the speed of light;

determining a first resonant frequency of the particle in one electromagnetic frequency range by dividing the velocity of the electromagnetic radiation through the surrounding medium by the wavelength of the particle;

~~shifting multiplying or dividing~~ the first resonant frequency by a factor of a power of two to provide a second at least one of a group of resonant frequency frequencies in ~~at least one other another~~ electromagnetic frequency range;

programming the frequency-emitting device to emit the second at least one of a group of resonant frequencies frequency in the ~~at least one other electromagnetic frequency range~~; and

selectively influencing the target particle with the ~~at least one of a group of second resonant frequencies frequency~~ in the another at least one other electromagnetic frequency range when the frequency-emitting device emits the ~~at least one of a group of second~~ resonant

~~frequencies~~ frequency ~~in the at least one other electromagnetic frequency range~~ into the medium surrounding the particle.

18. (Original) The method of claim 17, wherein the medium surrounding the particle is in-vivo tissue having a unique electrical permittivity, wherein determining the velocity of the electromagnetic radiation through the medium surrounding the particle comprises relating the unique electrical permittivity of in-vivo tissue to the velocity, wherein $velocity = 1 / \sqrt{(\epsilon_0 \mu_0)}$, where ϵ_0 is electrical permittivity, and μ_0 is magnetic permeability.

19. (Original) The method of claim 18, further comprising the step of determining a refractive index of the electromagnetic radiation through the in-vivo tissue by dividing the speed of light in a vacuum by the speed of light in in-vivo tissue, wherein dividing one therapeutic resonant frequency determined for the particle surrounded by air by the refractive index for in-vivo tissue yields one of the therapeutic resonant frequencies for the particle surrounded by in-vivo tissue.

20. (Currently Amended) The method of claim 17, further comprising the steps of:

 multiplying the second ~~at least one of a group of resonant~~ frequency ~~frequencies~~ in at least one other another electromagnetic frequency range by a positive integer to determine harmonic frequencies,

 dividing the second ~~at least one of a group of resonant~~ frequency ~~frequencies~~ in at least one other another electromagnetic frequency range by a positive integer to determine subharmonic frequencies,

 programming the frequency-emitting device to emit the harmonic and subharmonic frequencies, and

 selectively influencing the target particle with the second ~~at least one of a group of resonant~~ frequency ~~frequencies~~ in at least one other another electromagnetic frequency range and the harmonic and subharmonic frequencies when the frequency-emitting device emits the second ~~at least one of a group of resonant~~ frequency ~~frequencies~~ in at least one other electromagnetic

~~frequency range~~ and the harmonic and subharmonic frequencies into the medium surrounding the particle.

21. (Original) The method of claim 17, wherein selectively influencing the particle comprises debilitating the particle.

22. (Original) The method of claim 17, wherein selectively influencing the particle comprises stimulating the particle.

23. (Currently Amended) The method of claim 17, wherein selectively influencing the particle with the second ~~at least one of a group of resonant frequency frequencies~~ in ~~at least one other~~ another electromagnetic frequency range comprises selectively influencing the particle in humans.

24. (Currently Amended) The method of claim 17, wherein selectively influencing the particle with the second ~~at least one of a group of resonant frequency frequencies~~ in ~~at least one other~~ another electromagnetic frequency range comprises selectively influencing the particle in animals.

25. (Currently Amended) The method of claim 17, wherein selectively influencing the particle with the second ~~at least one of a group of resonant frequency frequencies~~ in ~~at least one other~~ another electromagnetic frequency range comprises selectively influencing the particle in agricultural settings.

26. (Currently amended) The method of claim 17, wherein selectively influencing the particle with the second ~~at least one of a group of resonant frequency frequencies~~ in ~~at least one other~~ another electromagnetic frequency range comprises selectively influencing the particle in water systems.

27. (Currently Amended) The method of claim 17, wherein selectively influencing the particle with the second ~~at least one of a group of resonant frequency frequencies in at least one other another~~ electromagnetic frequency range comprises selectively influencing the particle in food processing systems.

28. (Currently Amended) A method for determining therapeutic resonant frequencies of electromagnetic radiation for influencing atomic and molecular particles, each particle having a mass and surrounded by a first medium, comprising:

providing a frequency-emitting device;

determining a velocity of the electromagnetic radiation through the first medium surrounding the particle;

determining a wavelength of the particle by dividing Plank's constant by the product of the mass of the particle and the speed of light;

determining a first resonant frequency of the particle in one electromagnetic frequency range by dividing the velocity of the electromagnetic radiation through the first medium by the wavelength of the particle;

~~shifting~~ multiplying or dividing the first resonant frequency by a factor of a power of two to provide a second ~~at least one of a group of resonant frequency frequencies in at least one other another~~ electromagnetic frequency range;

~~multiplying the second at least one of a group of resonant frequency frequencies in at least one other electromagnetic frequency range~~ by a positive integer to determine harmonic frequencies;

~~dividing the second at least one of a group of resonant frequency frequencies in at least one other electromagnetic frequency range~~ by a positive integer to determine subharmonic frequencies;

programming the frequency-emitting device to emit the second ~~at least one of a group of resonant frequency frequencies in at least one other another~~ electromagnetic frequency range and the harmonic and subharmonic frequencies; and

selectively influencing the particle with the ~~at least one of a group of~~ second resonant frequencies frequency in the another ~~at least one other~~ electromagnetic frequency range and the harmonic and subharmonic frequencies when the frequency-emitting device emits the ~~at least one of a group of~~ second resonant frequencies frequency ~~in the at least one other electromagnetic frequency range~~ and the harmonic and subharmonic frequencies into the first medium surrounding the particle.

29. (Currently Amended) The method of claim 28, wherein the particle is surrounded by a second medium, further comprising determining resonant frequencies for the particle surrounded by the second medium, the second medium having a unique electrical permittivity, the method further comprising determining the velocity of the electromagnetic radiation through the second medium according to the relationship

$$\text{velocity} = 1 / \sqrt{(\epsilon_0 \mu_0)},$$

where ϵ_0 is electrical permittivity, and μ_0 is magnetic permeability, dividing the speed of light in a vacuum by the velocity in the second medium to determine a refractive index of the electromagnetic radiation through the second medium, and dividing the first resonant frequency in one electromagnetic frequency range and the second ~~at least one of a group of~~ resonant frequency ~~frequencies~~ in ~~at least one other~~ another electromagnetic frequency range determined for the particle in the first medium by the refractive index for the second medium.